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L19: Entry 1 of 1

File: USPT

Aug 12, 2003

DOCUMENT-IDENTIFIER: US 6606744 B1

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TITLE: Providing collaborative installation management in a network-based supply chain environment

Detailed Description Text (248):

FIG. 14 is a flowchart illustrating a network data management process in accordance with a preferred embodiment. First, in step 1400, data is collected relating to usage and events occurring over a hybrid network. Next, in step 1402, the data is analyzed to determine a status of the hybrid network which in turn, in step 1404, is utilized during management of the hybrid network. Further, in step 1406, billing rates and discounts are determined based on the status of the hybrid network.

Detailed Description Text (259):

The Problem Handling Process 1502 and the Network Data Management 1300 feed information to the Rating and Discounting Process 1306, as shown in FIG. 23. This process applies the correct rating rules to usage data on a customer-by-customer basis, as required. It also applies any discounts agreed to as part of the Ordering Process, for promotional discounts and charges, and for outages. In addition, the Rating and Discounting Process 1306 applies any rebates due because service level agreements were not met. The aim is to correctly rate usage and to correctly apply discounts, promotions and credits.

Detailed Description Text (572):

Banks desire an Internet payment solution that emulates existing Point of Sale (POS) applications that are currently installed on their host computers, and require minimal changes to their host systems. This is a critical requirement since any downtime for a banks host computer system represents an enormous expense. Currently, VeriFone supports over fourteen hundred different payment-related applications. The large number of applications is necessary to accommodate a wide variety of host message formats, diverse methods for communicating to a variety of hosts with different dial-up and direct-connect schemes, and different certification around the world. In addition, there are a wide variety of business processes that dictate how a Point of Sale (POS) terminal queries a user for data and subsequently displays the data. Also, various vertical market segments, such as hotels, car rental agencies, restaurants, retail sales, mail sales/telephone sales require interfaces for different types of data to be entered, and provide different discount rates to merchants for complying with various data types. Moreover, a plethora of report generation mechanisms and formats are utilized by merchants that banking organizations work with.

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L10	6070142.pn or 6430562.pn.	2	L10
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L8	L1 and (incentiv\$)	0	L8
L7	L1 and (discount\$ or coupon\$)	0	L7

<u>L6</u>	L1 and (attribut\$ and cat\$)	1	<u>L6</u>
<u>L5</u>	L1 and (attribut\$ or cat\$)	1	<u>L5</u>
<u>L4</u>	L1 and (attribut\$ or caterg\$)	1	<u>L4</u>
<u>L3</u>	L1 and (order\$ with product\$)	1	<u>L3</u>
<u>L2</u>	L1 and (authentic\$ or verif\$)	0	<u>L2</u>
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END OF SEARCH HISTORY

L18: Entry 1 of 1

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TITLE: Providing collaborative installation management in a network-based supply chain environment

Drawing Description Text (25):

FIG. 23 shows a block diagram of the Rating and Discounting Process in accordance with a preferred embodiment;

Drawing Description Text (26):

FIG. 24 is a flowchart illustrating Rating and Discounting Process in accordance with a preferred embodiment;

Detailed Description Text (67):

The method and system of this example of the present invention utilizes selected mixed-integer programs to efficiently model the information obtained during the iterative steps of the present invention in cooperation with a computer having sufficient memory. Such steps include the determination of nodes within the SONET under review, identification of the number of periods within the selected time interval, the determination of demand between nodes over this time period, preferably in units of DS3, and the determination of discounted add-drop costs for a plurality of selected Add/Drop Multiplexers (ADM's) and related components based upon projected availability. If the number of nodes under review is small, once this information is determined, then the optimized discounted fixed and interconnection costs for this plurality of ADM's may be determined in accordance with a first selected mixed integer program. An electrical signal may thereafter be generated for receipt by the computer memory corresponding to a set of logical self-healing rings with preliminary, albeit detailed, routing information. In contrast, when the number of nodes under review is large, a heuristic approach is required.

Detailed Description Text (103):

FIG. 11 illustrates a flowchart for a methodology 1100 for providing maintenance and service in a network-based supply chain in accordance with an embodiment of the present invention. In operation 1102, one or more notices recommended maintenance and service are received utilizing a network from at one or more manufacturers. In operation 1104, one or more requests for maintenance and service are received utilizing the network from one or more service providers. Maintenance and service is scheduled in operation 1106 utilizing the notices and the requests. The schedule is transmitted to the manufacturers and the service providers utilizing the network in operation 1108.

Detailed Description Text (104):

In an embodiment of the present invention, the availability of the manufacturers to perform maintenance and service may be monitored utilizing the network. In this embodiment, the manufacturers are scheduled to perform maintenance and service based on their availability. In another embodiment of the present invention, the progress of the manufacturers in completing scheduled maintenance and service may

be monitored utilizing the network. The schedule may then be adjusted according to the progress of the manufacturers. The adjusted schedule is then transmitted utilizing the network to the manufacturers and the service providers.

Detailed Description Text (245):

FIG. 13 shows a block diagram of the Network Data Management 1300 in accordance with a preferred embodiment of the present invention. Network Data Management 1300 encompasses the collection of usage data and events for the purpose of network performance and traffic analysis. This data may also be an input to Billing (Rating and Discounting) processes at the Service Management Layer, depending on the service and its architecture.

Detailed Description Text (248):

FIG. 14 is a flowchart illustrating a network data management process in accordance with a preferred embodiment. First, in step 1400, data is collected relating to usage and events occurring over a hybrid network. Next, in step 1402, the data is analyzed to determine a status of the hybrid network which in turn, in step 1404, is utilized during management of the hybrid network. Further, in step 1406, billing rates and discounts are determined based on the status of the hybrid network.

Detailed Description Text (259):

The Problem Handling Process 1502 and the Network Data Management 1300 feed information to the Rating and Discounting Process 1306, as shown in FIG. 23. This process applies the correct rating rules to usage data on a customer-by-customer basis, as required. It also applies any discounts agreed to as part of the Ordering Process, for promotional discounts and charges, and for outages. In addition, the Rating and Discounting Process 1306 applies any rebates due because service level agreements were not met. The aim is to correctly rate usage and to correctly apply discounts, promotions and credits.

Detailed Description Text (260):

FIG. 24 is a flowchart illustrating Rating and Discounting Process in accordance with a preferred embodiment. First, in step 2400, hybrid network customer usage information is received. In step 2402, network service level agreement violations are collected, and, in step 2404, network quality of service violations are received by the Rating and Discounting system. Next, in step 2406, rating rules are applied to the network customer usage information. Further, in step 2408, negotiated discounts are determined based on the network quality of service violations and, in step 2410, rebates are determined based on the network service level agreement violations. Thereafter, in step 2412, billing data reflecting the usage information, the negotiated discounts, and the rebates is provided to generate a customer invoice.

Detailed Description Text (261):

Utilizing information from the Rating and Discounting Process 1306, the Invoice and Collections Process 1504, as shown in FIG. 25, creates correct billing information. This process encompasses sending invoices to customers, processing their payments and performing payment collections. In addition, this process handles customer inquiries about bills, and is responsible to resolve billing problems to the customer's satisfaction. The aim is to provide a correct bill and, if there is a billing problem, resolve it quickly with appropriate status to the customer. An additional aim is to collect money due the service provider in a professional and customer supportive manner.

Detailed Description Text (262):

FIG. 26 is a flowchart illustrating an Invoice and Collections Process in accordance with a preferred embodiment. First, in step 2600, customer account inquiries and customer payment information is received by the system. Next, in step 2602, billing data, including discounts due to quality of service violations and rebates due to service level agreement violations, is collected and processed.

Thereafter, in step 2604, customer account invoices are created for distribution based on the customer payment information and the billing data.

Detailed Description Text (266):

In a third step 2704, the events generated in step 2702 are utilized to generate a bill for the customer. In addition to normal billing for service provided via the hybrid network, the bill is modified based on events generated during the media transfer. For example, events representing SLA violations are used to credit customers. As discussed above with reference to FIGS. 21, 23, and 25, the Problem Handling Process 1502 is responsible for receiving service complaints and other service-affecting problems. Together with the Network Data Management 1300, the Problem Handling Process feeds data to the Discounting Process 1306. The Discounting Process 1306 applies the correct rating rules on a customer-by-customer basis, and applies discounts for events, such as outages and other SLA violations. Finally, the Invoice and Collections Process 1504, utilizes the information from the Discounting Process 1306 to create customer billing information.

Detailed Description Text (347):

In today's telephony environment, a caller must contact an operator to initiate a conference call and/or have all parties dial a common number to connect into a conference call. This requires the cost of a human operator and the inconvenience of dialing a predefined number to be carried as overhead of each conference call. It also makes it very inefficient to schedule a conference call and assure that all parties are available to participate. It also requires a dedicated number for all the parties to access to facilitate the call.

Detailed Description Text (560):

Another system is provided using self-service terminals for dispensing voice and video information, printed documents, and goods and for accepting orders and payments therefor for travel related services by currency or credit card. The self-service terminals include a processor, printer, dispenser, data sources including a mass storage unit, a card reader, a coin box, and a communication device for communicating with a remote service center. The mass storage unit stores transitory information, such as flight schedules, ticket prices, weather information and other information useful in the planning of a business trip or vacation which is periodically updated via a communication link with the remote control center. The self-service terminal normally operates off-line.

Detailed Description Text (572):

Banks desire an Internet payment solution that emulates existing Point of Sale (POS) applications that are currently installed on their host computers, and require minimal changes to their host systems. This is a critical requirement since any downtime for a banks host computer system represents an enormous expense. Currently, VeriFone supports over fourteen hundred different payment-related applications. The large number of applications is necessary to accommodate a wide variety of host message formats, diverse methods for communicating to a variety of hosts with different dial-up and direct-connect schemes, and different certification around the world. In addition, there are a wide variety of business processes that dictate how a Point of Sale (POS) terminal queries a user for data and subsequently displays the data. Also, various vertical market segments, such as hotels, car rental agencies, restaurants, retail sales, mail sales/telephone sales require interfaces for different types of data to be entered, and provide different discount rates to merchants for complying with various data types. Moreover, a plethora of report generation mechanisms and formats are utilized by merchants that banking organizations work with.

Detailed Description Text (669):

The fixed income securities issued by the United States Government are known as U.S. treasuries. These instruments typically span maturity terms at issue of 13 to 52 weeks (T-bills), one to ten years (notes), and up to 30 years (bonds). The T-

bills are pure discount securities having no coupons. Almost all other treasuries having longer terms are coupon notes or bonds, with a defined payment cycle of semi-annual payments to the holder.

Detailed Description Text (954):

Users may order and register for any educational offering on an interactive interface through operation 7102 of FIG. 71. Examples of offerings may include third party training and online training. The interactive interface may be integrated with the commerce component to permit transactional processing when placing an order. For example, a user may sign up for an offered course and pay the tuition by credit card. Alternatively, the commerce component could create a payment schedule which requires that payments be made periodically. Optionally, the registration and ordering components are able to integrate with third party service providers' systems.

Detailed Description Text (1147):

CONFIGURATION MANAGEMENT CAPABILITIES Provides centralized application installation Schedules software updates to occur at a specific time (e.g. certain days, off-peak hours) Creates standard environment for applications Assigns application rights to groups or individuals Blocks unauthorized deletion of network-installed applications Integrates with web applications revision control system Provides logging mechanism to track configuration change requests

Detailed Description Text (1149):

WEB APPLICATION STAGING Provides ability to preview, test and change applications before production stage Provides ability to schedule releases (e.g. time-based batch release, individual immediate release, etc.)

Detailed Description Text (1150):

The ability to preview, test and change applications before production stage may be provided by the management and operations component of the present invention, as may the ability to schedule releases, such as time-based batch releases, individual immediate releases, and the like.

Detailed Description Text (1167):

WAF employs a variety of capabilities that serve as a foundation for a general purpose, sufficiently secure distributed electronic commerce solution. WAF enables an electronic commerce marketplace that supports divergent, competitive business partnerships, agreements, and evolving overall business models. For example, WAF includes features that: "sufficiently" impede unauthorized and/or uncompensated use of electronic information and/or appliances through the use of secure communication, storage, and transaction management technologies. WAF supports a model wide, distributed security implementation which creates a single secure "virtual" transaction processing and information storage environment. WAF enables distributed WAF installations to securely store and communicate information and remotely control the execution processes and the character of use of electronic information at other WAF installations and in a wide variety of ways; support low-cost, efficient, and effective security architectures for transaction control, auditing, reporting, and related communications and information storage. WAF may employ tagging related security techniques, the time-ageing of encryption keys, the compartmentalization of both stored control information (including differentially tagging such stored information to ensure against substitution and tampering) and distributed content (to, for many content applications, employ one or more content encryption keys that are unique to the specific WAF installation and/or user), private key techniques such as triple DES to encrypt content, public key techniques such as RSA to protect communications and to provide the benefits of digital signature and authentication to securely bind together the nodes of a WAF arrangement, secure processing of important transaction management executable code, and a combining of a small amount of highly secure, hardware protected storage space with a much larger "exposed" mass media storage space storing secured

(normally encrypted and tagged) control and audit information. WAF employs special purpose hardware distributed throughout some or all locations of a WAF implementation: a) said hardware controlling important elements of: content preparation (such as causing such content to be placed in a WAF content container and associating content control information with said content), content and/or electronic appliance usage auditing, content usage analysis, as well as content usage control; and b) said hardware having been designed to securely handle processing load module control activities, wherein said control processing activities may involve a sequence of required control factors; support dynamic user selection of information subsets of a WAF electronic information product (WAF controlled content). This contrasts with the constraints of having to use a few high level individual, pre-defined content provider information increments such as being required to select a whole information product or product section in order to acquire or otherwise use a portion of such product or section. WAF supports metering and usage control over a variety of increments (including "atomic" increments, and combinations of different increment types) that are selected ad hoc by a user and represent a collection of pre-identified one or more increments (such as one or more blocks of a preidentified nature, e.g., bytes, images, logically related blocks) that form a generally arbitrary, but logical to a user, content "deliverable." WAF control information (including budgeting, pricing and metering) can be configured so that it can specifically apply, as appropriate, to ad hoc selection of different, unanticipated variable user selected aggregations of information increments and pricing levels can be, at least in part, based on quantities and/or nature of mixed increment selections (for example, a certain quantity of certain text could mean associated images might be discounted by 15%; a greater quantity of text in the "mixed" increment selection might mean the images are discounted 20%). Such user selected aggregated information increments can reflect the actual requirements of a user for information and is more flexible than being limited to a single, or a few, high level, (e.g. product, document, database record) predetermined increments. Such high level increments may include quantities of information not desired by the user and as a result be more costly than the subset of information needed by the user if such a subset was available. In sum, the present invention allows information contained in electronic information products to be supplied according to user specification. Tailoring to user specification allows the present invention to provide the greatest value to users, which in turn will generate the greatest amount of electronic commerce activity. The user, for example, would be able to define an aggregation of content derived from various portions of an available content product, but which, as a deliverable for use by the user, is an entirely unique aggregated increment. The user may, for example, select certain numbers of bytes of information from various portions of an information product, such as a reference work, and copy them to disc in unencrypted form and be billed based on total number of bytes plus a surcharge on the number of "articles" that provided the bytes. A content provider might reasonably charge less for such a user defined information increment since the user does not require all of the content from all of the articles that contained desired information. This process of defining a user desired information increment may involve artificial intelligence database search tools that contribute to the location of the most relevant portions of information from an information product and cause the automatic display to the user of information describing search criteria hits for user selection or the automatic extraction and delivery of such portions to the user. WAF further supports a wide variety of predefined increment types including: bytes, images, content over time for audio or video, or any other increment that can be identified by content provider data mapping efforts, such as: sentences, paragraphs, articles, database records, and byte offsets representing increments of logically related information.

Detailed Description Text (1168):

WAF supports as many simultaneous predefined increment types as may be practical for a given type of content and business model. securely store at a user's site potentially highly detailed information reflective of a user's usage of a variety

of different content segment types and employing both inexpensive "exposed" host mass storage for maintaining detailed information in the form of encrypted data and maintaining summary information for security testing in highly secure special purpose WAF installation nonvolatile memory (if available). support trusted chain of handling capabilities for pathways of distributed electronic information and/or for content usage related information. Such chains may extend, for example, from a content creator, to a distributor, a redistributor, a client user, and then may provide a pathway for securely reporting the same and/or differing usage information to one or more auditors, such as to one or more independent clearinghouses and then back to the content providers, including content creators. The same and/or different pathways employed for certain content handling, and related content control information and reporting information handling, may also be employed as one or more pathways for electronic payment handling (payment is characterized in the present invention as administrative content) for electronic content and/or appliance usage. These pathways are used for conveyance of all or portions of content, and/or content related control information. Content creators and other providers can specify the pathways that, partially or fully, must be used to disseminate commercially distributed property content, content control information, payment administrative content, and/or associated usage reporting information. Control information specified by content providers may also specify which specific parties must or may (including, for example, a group of eligible parties from which a selection may be made) handle conveyed information. It may also specify what transmission means (for example telecommunication carriers or media types) and transmission hubs must or may be used. support flexible auditing mechanisms, such as employing "bitmap meters," that achieve a high degree of efficiency of operation and throughput and allow, in a practical manner, the retention and ready recall of information related to previous usage activities and related patterns. This flexibility is adaptable to a wide variety of billing and security control strategies such as: upgrade pricing (e.g. suite purchases), pricing discounts (including quantity discounts), billing related time duration variables such as discounting new purchases based on the timing of past purchases, and security budgets based on quantity of different, logically related units of electronic information used over an interval of time.

Detailed Description Text (1169):

Use of bitmap meters (including "regular" and "wide" bitmap meters) to record usage and/or purchase of information, in conjunction with other elements of the preferred embodiment of the present invention, uniquely supports efficient maintenance of usage history for: (a) rental, (b) flat fee licensing or purchase, (c) licensing or purchase discounts based upon historical usage variables, and (d) reporting to users in a manner enabling users to determine whether a certain item was acquired, or acquired within a certain time period (without requiring the use of conventional database mechanisms, which are highly inefficient for these applications). Bitmap meter methods record activities associated with electronic appliances, properties, objects, or portions thereof, and/or administrative activities that are independent of specific properties, objects, etc., performed by a user and/or electronic appliance such that a content and/or appliance provider and/or controller of an administrative activity can determine whether a certain activity has occurred at some point, or during a certain period, in the past (for example, certain use of a commercial electronic content product and/or appliance). Such determinations can then be used as part of pricing and/or control strategies of a content and/or appliance provider, and/or controller of an administrative activity. For example, the content provider may choose to charge only once for access to a portion of a property, regardless of the number of times that portion of the property is accessed by a user. support "launchable" content, that is content that can be provided by a content provider to an end-user, who can then copy or pass along the content to other end-user parties without requiring the direct participation of a content provider to register and/or otherwise initialize the content for use. This content goes "out of (the traditional distribution) channel" in the form of a "traveling object." Traveling objects are containers that securely carry at least

some permissions information and/or methods that are required for their use (such methods need not be carried by traveling objects if the required methods will be available at, or directly available to a destination WAF installation). Certain travelling objects may be used at some or all WAF installations of a given WAF arrangement since they can make available the content control information necessary for content use without requiring the involvement of a commercial WAF value chain participant or data security administrator (e.g. a control officer or network administrator). As long as traveling object control information requirements are available at the user WAF installation secure subsystem (such as the presence of a sufficient quantity of financial credit from an authorized credit provider), at least some travelling object content may be used by a receiving party without the need to establish a connection with a remote WAF authority (until, for example, budgets are exhausted or a time content usage reporting interval has occurred). Traveling objects can travel "out-of-channel," allowing, for example, a user to give a copy of a traveling object whose content is a software program, a movie or a game, to a neighbor, the neighbor being able to use the traveling object if appropriate credit (e.g. an electronic clearinghouse account from a clearinghouse such as VISA or AT&T) is available. Similarly, electronic information that is generally available on an Internet, or a similar network, repository might be provided in the form of a traveling object that can be downloaded and subsequently copied by the initial downloader and then passed along to other parties who may pass the object on to additional parties. provide very flexible and extensible user identification according to individuals, installations, by groups such as classes, and by function and hierarchical identification employing a hierarchy of levels of client identification (for example, client organization ID, client department ID, client network ID, client project ID, and client employee ID, or any appropriate subset of the above). provide a general purpose, secure, component based content control and distribution system that functions as a foundation transaction operating system environment that employs executable code pieces crafted for transaction control and auditing. These code pieces can be reused to optimize efficiency in creation and operation of trusted, distributed transaction management arrangements. WAF supports providing such executable code in the form of "atomic" load modules and associated data. Many such load modules are inherently configurable, aggregatable, portable, and extensible and singularly, or in combination (along with associated data), run as control methods under the WAF transaction operating environment. WAF can satisfy the requirements of widely differing electronic commerce and data security applications by, in part, employing this general purpose transaction management foundation to securely process WAF transaction related control methods. Control methods are created primarily through the use of one or more of said executable, reusable load module code pieces (normally in the form of executable object components) and associated data. The component nature of control methods allows the present invention to efficiently operate as a highly configurable content control system. Under the present invention, content control models can be iteratively and asynchronously shaped, and otherwise updated to accommodate the needs of WAF participants to the extent that such shaping and otherwise updating conforms to constraints applied by a WAF application, if any (e.g., whether new component assemblies are accepted and, if so, what certification requirements exist for such component assemblies or whether any or certain participants may shape any or certain control information by selection amongst optional control information (permissions record) control methods. This iterative (or concurrent) multiple participant process occurs as a result of the submission and use of secure, control information components (executable code such as load modules and/or methods, and/or associated data). These components may be contributed independently by secure communication between each control information influencing WAF participant's WAF installation and may require certification for use with a given application, where such certification was provided by a certification service manager for the WAF arrangement who ensures secure interoperability and/or reliability (e.g., bug control resulting from interaction) between appliances and submitted control methods. The transaction management control functions of a WAF electronic appliance transaction operating

environment interact with non-secure transaction management operating system functions to properly direct transaction processes and data related to electronic information security, usage control, auditing, and usage reporting. WAF provides the capability to manage resources related to secure WAF content and/or appliance control information execution and data storage. facilitate creation of application and/or system functionality under WAF and to facilitate integration into electronic appliance environments of load modules and methods created under the present invention. To achieve this, WAF employs an Application Programmer's Interface (API) and/or a transaction operating system (such as a ROS) programming language with incorporated functions, both of which support the use of capabilities and can be used to efficiently and tightly integrate WAF functionality into commercial and user applications. support user interaction through: (a) "Pop-Up" applications which, for example, provide messages to users and enable users to take specific actions such as approving a transaction, (b) stand-alone WAF applications that provide administrative environments for user activities such as: end-user preference specifications for limiting the price per transaction, unit of time, and/or session, for accessing history information concerning previous transactions, for reviewing financial information such as budgets, expenditures (e.g. detailed and/or summary) and usage analysis information, and (c) WAF aware applications which, as a result of the use of a WAF API and/or a transaction management (for example, ROS based) programming language embeds WAF "awareness" into commercial or internal software (application programs, games, etc.) so that WAF user control information and services are seamlessly integrated into such software and can be directly accessed by a user since the underlying functionality has been integrated into the commercial software's native design. For example, in a WAF aware word processor application, a user may be able to "print" a document into a WAF content container object, applying specific control information by selecting from amongst a series of different menu templates for different purposes (for example, a confidential memo template for internal organization purposes may restrict the ability to "keep," that is to make an electronic copy of the memo). employ "templates" to ease the process of configuring capabilities of the present invention as they relate to specific industries or businesses. Templates are applications or application add-ons under the present invention. Templates support the efficient specification and/or manipulation of criteria related to specific content types, distribution approaches, pricing mechanisms, user interactions with content and/or administrative activities, and/or the like. Given the very large range of capabilities and configurations supported by the present invention, reducing the range of configuration opportunities to a manageable subset particularly appropriate for a given business model allows the full configurable power of the present invention to be easily employed by "typical" users who would be otherwise burdened with complex programming and/or configuration design responsibilities template applications can also help ensure that WAF related processes are secure and optimally bug free by reducing the risks associated with the contribution of independently developed load modules, including unpredictable aspects of code interaction between independent modules and applications, as well as security risks associated with possible presence of viruses in such modules. WAF, through the use of templates, reduces typical user configuration responsibilities to an appropriately focused set of activities including selection of method types (e.g. functionality) through menu choices such as multiple choice, icon selection, and/or prompting for method parameter data (such as identification information, prices, budget limits, dates, periods of time, access rights to specific content, etc.) that supply appropriate and/or necessary data for control information purposes. By limiting the typical (non-programming) user to a limited subset of configuration activities whose general configuration environment (template) has been preset to reflect general requirements corresponding to that user, or a content or other business model can very substantially limit difficulties associated with content containerization (including placing initial control information on content), distribution, client administration, electronic agreement implementation, end-user interaction, and clearinghouse activities, including associated interoperability problems (such as conflicts resulting from

security, operating system, and/or certification incompatibilities). Use of appropriate WAF templates can assure users that their activities related to content WAF containerization, contribution of other control information, communications, encryption techniques and/or keys, etc. will be in compliance with specifications for their distributed WAF arrangement. WAF templates constitute preset configurations that can normally be reconfigurable to allow for new and/or modified templates that reflect adaptation into new industries as they evolve or to reflect the evolution or other change of an existing industry. For example, the template concept may be used to provide individual, overall frameworks for organizations and individuals that create, modify, market, distribute, consume, and/or otherwise use movies, audio recordings and live performances, magazines, telephony based retail sales, catalogs, computer software, information data bases, multimedia, commercial communications, advertisements, market surveys, infomercials, games, CAD/CAM services for numerically controlled machines, and the like. As the context surrounding these templates changes or evolves, template applications provided under the present invention may be modified to meet these changes for broad use, or for more focused activities. A given WAF participant may have a plurality of templates available for different tasks. A party that places content in its initial WAF container may have a variety of different, configurable templates depending on the type of content and/or business model related to the content. An end-user may have different configurable templates that can be applied to different document types (e-mail, secure internal documents, database records, etc.) and/or subsets of users (applying differing general sets of control information to different bodies of users, for example, selecting a list of users who may, under certain preset criteria, use a certain document). Of course, templates may, under certain circumstances have fixed control information and not provide for user selections or parameter data entry. support plural, different control models regulating the use and/or auditing of either the same specific copy of electronic information content and/or differently regulating different copies (occurrences) of the same electronic information content. Differing models for billing, auditing, and security can be applied to the same piece of electronic information content and such differing sets of control information may employ, for control purposes, the same, or differing, granularities of electronic information control increments. This includes supporting variable control information for budgeting and auditing usage as applied to a variety of predefined increments of electronic information, including employing a variety of different budgets and/or metering increments for a given electronic information deliverable for: billing units of measure, credit limit, security budget limit and security content metering increments, and/or market surveying and customer profiling content metering increments. For example, a CD-ROM disk with a database of scientific articles might be in part billed according to a formula based on the number of bytes decrypted, number of articles containing said bytes decrypted, while a security budget might limit the use of said database to no more than 5% of the database per month for users on the wide area network it is installed on. provide mechanisms to persistently maintain trusted content usage and reporting control information through both a sufficiently secure chain of handling of content and content control information and through various forms of usage of such content wherein said persistence of control may survive such use. Persistence of control includes the ability to extract information from a WAF container object by creating a new container whose contents are at least in part secured and that contains both the extracted content and at least a portion of the control information which control information of the original container and/or are at least in part produced by control information of the original container for this purpose and/or WAF installation control information stipulates should persist and/or control usage of content in the newly formed container. Such control information can continue to manage usage of container content if the container is "embedded" into another WAF managed object, such as an object which contains plural embedded WAF containers, each of which contains content derived (extracted) from a different source. enables users, other value chain participants (such as clearinghouses and government agencies), and/or user organizations, to specify preferences or requirements related to their use of electronic content and/or appliances. Content

users, such as end-user customers using commercially distributed content (games, information resources, software programs, etc.), can define, if allowed by senior control information, budgets, and/or other control information, to manage their own internal use of content. Uses include, for example, a user setting a limit on the price for electronic documents that the user is willing to pay without prior express user authorization, and the user establishing the character of metering information he or she is willing to allow to be collected (privacy protection). This includes providing the means for content users to protect the privacy of information derived from their use of a WAF installation and content and/or appliance usage auditing. In particular, WAF can prevent information related to a participant's usage of electronic content from being provided to other parties without the participant's tacit or explicit agreement. provide mechanisms that allow control information to "evolve" and be modified according, at least in part, to independently, securely delivered further control information. Said control information may include

Detailed Description Text (1170):

executable code (e.g., load modules) that has been certified as acceptable (e.g., reliable and trusted) for use with a specific WAF application, class of applications, and/or a WAF distributed arrangement. This modification (evolution) of control information can occur upon content control information (load modules and any associated data) circulating to one or more WAF participants in a pathway of handling of control information, or it may occur upon control information being received from a WAF participant. Handlers in a pathway of handling of content control information, to the extent each is authorized, can establish, modify, and/or contribute to, permission, auditing, payment, and reporting control information related to controlling, analyzing, paying for, and/or reporting usage of, electronic content and/or appliances (for example, as related to usage of WAF controlled property content). Independently delivered (from an independent source which is independent except in regards to certification), at least in part secure, control information can be employed to securely modify content control information when content control information has flowed from one party to another party in a sequence of WAF content control information handling. This modification employs, for example, one or more WAF component assemblies being securely processed in a WAF secure subsystem. In an alternate embodiment, control information may be modified by a senior party through use of their WAF installation secure sub-system after receiving submitted, at least in part secured, control information from a "junior" party, normally in the form of a WAF administrative object. Control information passing along WAF pathways can represent a mixed control set, in that it may include: control information that persisted through a sequence of control information handlers, other control information that was allowed to be modified, and further control information representing new control information and/or mediating data. Such a control set represents an evolution of control information for disseminated content. In this example the overall content control set for a WAF content container is "evolving" as it securely (e.g. communicated in encrypted form and using authentication and digital signature techniques) passes, at least in part, to a new participant's WAF installation where the proposed control information is securely received and handled. The received control information may be integrated (through use of the receiving parties' WAF installation secure sub-system) with in-place control information through a negotiation process involving both control information sets. For example, the modification, within the secure sub-system of a content provider's WAF installation, of content control information for a certain WAF content container may have occurred as a result of the incorporation of required control information provided by a financial credit provider. Said credit provider may have employed their WAF installation to prepare and securely communicate (directly or indirectly) said required control information to said content provider. Incorporating said required control information enables a content provider to allow the credit provider's credit to be employed by a content end-user to compensate for the end-user's use of WAF controlled content and/or appliances, so long as said end-user has a credit account with said financial

credit provider and said credit account has sufficient credit available. Similarly, control information requiring the payment of taxes and/or the provision of revenue information resulting from electronic commerce activities may be securely received by a content provider. This control information may be received, for example, from a government agency. Content providers might be required by law to incorporate such control information into the control information for commercially distributed content and/or services related to appliance usage. Proposed control information is used to an extent allowed by senior control information and as determined by any negotiation trade-offs that satisfy priorities stipulated by each set (the received set and the proposed set). WAF also accommodates different control schemes specifically applying to different participants (e.g., individual participants and/or participant classes (types)) in a network of WAF content handling participants. support multiple simultaneous control models for the same content property and/or property portion. This allows, for example, for concurrent business activities which are dependent on electronic commercial product content distribution, such as acquiring detailed market survey information and/or supporting advertising, both of which can increase revenue and result in lower content costs to users and greater value to content providers. Such control information and/or overall control models may be applied, as determined or allowed by control information, in differing manners to different participants in a pathway of content, reporting, payment, and/or related control information handling. WAF supports applying different content control information to the same and/or different content and/or appliance usage related activities, and/or to different parties in a content and/or appliance usage model, such that different parties (or classes of WAF users, for example) are subject to differing control information managing their use of electronic information content. For example, differing control models based on the category of a user as a distributor of a WAF controlled content object or an end-user of such content may result in different budgets being applied. Alternatively, for example, a one distributor may have the right to distribute a different array of properties than another distributor (from a common content collection provided, for example, on optical disc). An individual, and/or a class or other grouping of end-users, may have different costs (for example, a student, senior citizen, and/or poor citizen user of content who may be provided with the same or differing discounts) than a "typical" content user. support provider revenue information resulting from customer use of content and/or appliances, and/or provider and/or end-user payment of taxes, through the transfer of credit and/or electronic currency from said end-user and/or provider to a government agency, might occur "automatically" as a result of such received control information causing the generation of a WAF content container whose content includes customer content usage information reflecting secure, trusted revenue summary information and/or detailed user transaction listings (level of detail might depend, for example on type or size of transaction--information regarding a bank interest payment to a customer or a transfer of a large (e.g. over \$10,000) might be, by law, automatically reported to the government). Such summary and/or detailed information related to taxable events and/or currency, and/or creditor currency transfer, may be passed along a pathway of reporting and/or payment to the government in a WAF container. Such a container may also be used for other WAF related content usage reporting information. support the flowing of content control information through different "branches" of content control information handling so as to accommodate, under the present invention's preferred embodiment, diverse controlled distributions of WAF controlled content. This allows different parties to employ the same initial electronic content with differing (perhaps competitive) control strategies. In this instance, a party who first placed control information on content can make certain control assumptions and these assumptions would evolve into more specific and/or extensive control assumptions. These control assumptions can evolve during the branching sequence upon content model participants submitting control information changes, for example, for use in "negotiating" with "in place" content control information. This can result in new or modified content control information and/or it might involve the selection of certain one or more already "in-place" content usage control methods over in-place alternative methods, as well

as the submission of relevant control information parameter data. This form of evolution of different control information sets applied to different copies of the same electronic property content and/or appliance results from WAF control information flowing "down" through different branches in an overall pathway of handling and control and being modified differently as it diverges down these different pathway branches. This ability of the present invention to support multiple pathway branches for the flow of both WAF content control information and WAF managed content enables an electronic commerce marketplace which supports diverging, competitive business partnerships, agreements, and evolving overall business models which can employ the same content properties combined, for example, in differing collections of content representing differing at least in part competitive products. enable a user to securely extract, through the use of the secure subsystem at the user's WAF installation, at least a portion of the content included within a WAF content container to produce a new, secure object (content container), such that the extracted information is maintained in a continually secure manner through the extraction process. Formation of the new WAF container containing such extracted content shall result in control information consistent with, or specified by, the source WAF content container, and/or local WAF installation secure subsystem as appropriate, content control information. Relevant control information, such as security and administrative information, derived, at least in part, from the parent (source) object's control information, will normally be automatically inserted into a new WAF content container object containing extracted WAF content. This process typically occurs under the control framework of a parent object and/or WAF installation control information executing at the user's WAF installation secure subsystem (with, for example, at least a portion of this inserted control information being stored securely in encrypted form in one or more permissions records). In an alternative embodiment, the derived content control information applied to extracted content may be in part or whole derived from, or employ, content control information stored remotely from the WAF installation that performed the secure extraction such as at a remote server location. As with the content control information for most WAF managed content, features of the present invention allows the content's control information to: (a) "evolve," for example, the extractor of content may add new control methods and/or modify control parameter data, such as WAF application compliant methods, to the extent allowed by the content's in-place control information. Such new control information might specify, for example, who may use at least a portion of the new object, and/or how said at least a portion of said extracted content may be used (e.g. when at least a portion may be used, or what portion or quantity of portions may be used); (b) allow a user to combine additional content with at least a portion of said extracted content, such as material authored by the extractor and/or content (for example, images, video, audio, and/or text) extracted from one or more other WAF container objects for placement directly into the new container; (c) allow a user to securely edit at least a portion of said content while maintaining said content in a secure form within said WAF content container; (d) append extracted content to a pre-existing WAF content container object and attach associated control information--in these cases, user added information may be secured, e.g., encrypted, in part or as a whole, and may be subject to usage and/or auditing .. control information that differs from the those applied to previously in place object content; (e) preserve WAF control over one or more portions of extracted content after various forms of usage of said portions, for example, maintain content in securely stored form while allowing "temporary" on screen display of content or allowing a software program to be maintained in secure form but transiently decrypt any encrypted executing portion of said program (all, or only a portion, of said program may be encrypted to secure the program).

Detailed Description Text (1291):

In addition, the pricing mechanism should be tied to any sort of discounting or promotional incentives. For Business-to-Business implementations, contracts and agreements may be in place to drive the specific pricing. Discounts may be applied on an incremental or time-oriented basis. A common concept used are electronic

coupons or other types of discounts. The customers may have earned or acquired a coupon or other form of discount earlier in the interaction with the site. The coupon, usually stored on the user's machine, may be applied to the purchased products.

Detailed Description Text (1399):

The goal of a personalized site is to increase the value of the interaction of the user with the organization. Unfortunately, the site has the potential to do the opposite. The personalization aspects of the site could actually offend or deter customers. The approach the site uses for information capture will play a large part in the personalized site's success. The following are some items to be aware of when capturing user profile information: Provide Value. In general, people do not like to give away personal information. To overcome this, the site needs to offer value for the information capture or provide a win-win situation. If the information capture results in something benefiting the user, they are more likely to provide the information. A good example is the grocery-preferred card. For instance Jewel Food Stores offered a preferred card where users receive discounts off of selected groceries each week. The user must present their card to receive the discount. Jewel obtains valuable user profile attributes such as purchase history and trends while the customer receives tangible discounts. The same analogy can be applied to the explicit information capture techniques used by the personalized site. Small Appropriate Questions. Filling out long forms or questionnaires can also be an instant turn off. Users don't want to be burdened by information capture techniques. They have their own goals and agendas and if the site distracts them from accomplishing this, the site risks losing a customer. If the information capture is not directly tied to some value that the user will instantly see, break it into small units or single questions. In addition, ask only what is needed and when it is appropriate. If the user is required to fill out a long questionnaire at the start of the interaction or when they first visit the site, they are likely to leave. By gathering the information only when it is needed and tied to tangible value, the user is more likely to provide accurate information and remain at the site. Accuracy Issues. There is nothing that stops the users from lying or providing false information. Although there is no sure-fire way to prevent this, the site can reduce the possibilities of this occurring. As mentioned above, users are more likely to be truthful if when answering questions that are tied to perceived value or in small amounts. The site should explain the benefit of accurate information and how it will benefit the user by serving them better. Information may also change over time. The user's interests or their marital status may change over time. It may be necessary to occasionally verify information. If derived information is stored, these may also become inaccurate over time. For example, driver status may change over time due to the occurrence of moving violations or a change in marital status. The same risks apply to information captured implicitly. Privacy Issues. The fine line of a user's personal space and their legal rights is another possible area for concern. Regulatory Compliance. The details of a user's legal rights are still not clear. In the near future, legal regulations will require all companies to place privacy statements on their Web sites and to provide customers with a mechanism to examine and challenge personal data collected about them. Customer access to personal information will be difficult to implement due to user authentication requirements, and the unpredictable nature of data requests and alterations. In either case, failure to comply with a site's stated privacy policy or failure to provide customers with a copy of their personal information will mean legal prosecution of organizations under national regulations. Defining Preferences or Personality. The definition of "private" information is open to debate. For example, the European Data Protection Directive defines a number of areas (e.g., political affiliation) that are considered particularly private and, therefore, subject to enhanced controls. However, the ability of the Web to follow users' search patterns and to customize content provided by certain sites (e.g., most current-affairs sites) will offer the de facto ability to identify users' viewing preferences without the explicit authorization that the law would require if they were identifying their own

characteristics. This issue will cause the most friction between U.S. and European regulators, as the United States tends to assess privacy on the basis of context and usage, while Europe bases it on an absolute measure of the data's perceived privacy (see Note 1). The collection of data that could be used to derive sensitive information will be subject (in each jurisdiction) to the equivalent privacy regulations as that level of sensitive information (0.7 probability). Children. Vendors whose Web sites are designed for children will be subject to greater public scrutiny for violations of privacy regulations and conventions. It will be politically sensitive for children's Web sites to perform customization of content or context across multiple visits. Selling information to third party providers. General data privacy guidelines state that information cannot be used in ways not explained to the subject at the time of collection. The problem results from the fact that the most personal information (e.g., a stock portfolio) is also the most valuable when sharing information with other application providers. This can cause tension between the value that the Web site provides its visitors (in terms of the degree of personalization that it is offering) compared with the value it can extract from the service that it provides (by sharing the information with advertisers or third-party organizations). Managing the conflicting requirements of personalization and information sharing will become a key element in determining the success of a Web site.

Detailed Description Text (1420):

One possible method of associating a rule and content to an interaction is by using a Dynamic Content Area (DCA). A DCA is embedded with a template and points to a specific rule, and a rule results set will be associated with specific content. For example a page may be explaining a particular service to a current user. The site may wish to display on the page a graphic that the user can relate to along with a list of benefits that are personalized to the user and finally list discounts that the user might be qualified for.

Detailed Description Text (1421):

A separate DCA would be used for each set of data. FIG. 102 illustrates an exemplary template 10200 with three DCAs embedded within the template. DCA1 10202 might be a place holder for the graphic. The rule associated with DCA 1 might be based on a set of PMFs such as Age and Gender. Depending on how the rule is evaluated, a different graphic might be displayed. (In this case a graphic is the content.) DCA2 10204 might represent a place holder for a list of benefits the user may receive from the service. This rule may be associated with different PMFs. For example, the PMFs for this rule might be marital status, number and ages of children and income level. Different benefits would be displayed based on how this rule is evaluated. In this case a textual statement about benefits is considered the content. DCA3 10206 might represent a place holder for discounts. This area may reuse the rule created for DCA 2 but the content is different. In this case, the content is a list of discount based on the rule evaluation. During the design of the site, a decision must be made to determine which areas of the site will provide personalized content to the user, the rules to use and matching logic associated with it, and what content should be displayed for each rule result. Since there is no face-to-face interaction with the user, identifying the content to use is very important. The web site must make the users feel as though they are being communicated directly. Once the page is requested or encountered by the user, the page is generated, and each DCA will request that a rule be executed and the content should be generated according to the user profile.

Detailed Description Text (1441):

Loyalty and Return Customer Programs Creating an environment that promotes customers to return to the site is critical for the longevity of the site. Many of the seller-centric implementations will utilize membership services and other incentive programs to try and promote customers to return. For example, site members would receive discounts and additional privileges, thus building a better relationship with the site. Incentives like frequent shopper points or access to

member only information are other common methods. The loyalty programs may require additional logic for permissions and content filtering. Most of this may be implemented by gathering and using profiles and integration with a complex personalization system. Return Programs are services geared toward enticing the customer to return to the site. The Internet eliminates two main factors affecting customer loyalty. The first is proximity. In the brick and mortar medium, customers tend to shop (or browse) close to where they live or work. The second factor is time or how long a store is open. With the Internet being 7 by 24 and geographically independent, these items are no longer relevant. For this reason, considerable effort may be geared toward creating return programs. The most common forms are electronic version of current methods, although they may be more effective due to personalization and real-time delivery.

Detailed Description Text (1448):

MAINTENANCE AND ADMINISTRATION 9008 FIG. 104 illustrates a flowchart for a method 10400 for administrating an e-Commerce system on a network. Operation of entities is monitored in operation 10402. Entities include server processes, disk space, memory availability, CPU utilization, access time to a server, and/or a number of connections in an e-Commerce system. In operation 10404, items including merchandising content, currency exchange rates, tax rates, and/or pricing in the e-Commerce system are updated at predetermined intervals. In addition, external data stored separately from the e-Commerce system is synchronized in operation 10406 with internal data stored on the e-Commerce system. Contact information received from users of the e-Commerce system is also managed in operation 10408. The items are altered based on profiles of the users of the e-Commerce system in operation 10410. One of the items altered based on the profiles of the users may include price, which may be altered to reflect a discount assigned to the user. A search may also be performed for the internal data in the e-Commerce system prior to the synchronization of the external data. As an option, load balancing services may also be performed that initiate and stop processes as utilization levels vary in the e-Commerce system. As another option, managing of the contact information may further include tracking responses to the users of the e-Commerce system. As with any system, a support, administration, and maintenance facility and procedures need to be put in place to remain operational as well as efficient. In general, packaged implementations will only provide minimal maintenance and administration facilities leaving the bulk of the burden to the integrator. The underlying technology for the facilities may be basic batch download/uploads, simple server processes and applications or even browser based. It is important to understand the system administration and maintenance needs, develop a plan, and stick with it. Some of the areas to consider are listed below. FIG. 105 illustrates high-level concepts of maintenance and administration of the framework.

Detailed Description Text (1452):

Merchandise Administration 10502 The merchandising aspect may introduce additional administration and maintenance. Procedures should be put in place to handle sold out merchandise and back order items. Updating merchandising content, currency, tax, and pricing may need to be performed on a regular basis. The merchandise administration facility should be able to handle pricing and discount items and have the ability to allow automatic updating and manual override capabilities for authorized administrators.

Detailed Description Text (1465):

FIG. 107 illustrates a flowchart for a method 10700 for completing a transaction over a network. Information is displayed information about a product for sale in operation 10702. Upon receiving an order for purchase of the product in operation 10704, a price of the product for sale is dynamically generated in operation 10706 based on the actual price of the product and discounts, taxes, fulfillment costs and/or delivery costs. Save and recall of the product and price of the order are also allowed in operation 10708. A method of payment is determined in operation 10710. When payment is received, the order is fulfilled (see operations 10712 and

10714).

Detailed Description Text (1475):
Discounting In general, pricing is calculated dynamically. Discounts may be applied for many reasons either to specific items or to the entire order. Additional discounts may be given for using a preferred payment mechanism. Other implementations may provide discounts at the end of month based on total sales.

Detailed Description Text (1478):

Order Information Other basic order information may be gathered during the check out processing. The most common method is an order form. The form should be easily customizable and may contain a variety of information. Order Form Standard online form with the usual questions: Name, Address, shipping location, credit card number, email address, etc. The user usually has the ability to submit or decline the order at this point. Submitted orders should be encrypted automatically by the commerce server. Customer Information (Establishing Customer Location.) If the basic customer information has not been gathered earlier in the process, it should be gathered before the payment phase. For some implementations, customers may wish to remain anonymous, but this is rare. Shipping/Billing Address Applications should be capable of supporting ship-to addresses independent of and different from the bill-to address. This allows billing for a product or service to be sent to one location, and the actual product to be delivered to another. Automated Inventory Management. In some cases, trading partners may set up Automatic Ordering based on usage or schedule. If inventory is used on a regular basis, the re-ordering process may be automated. Order Validation Inventory checks and verification of export restrictions can be done before the order is placed. Depending on when and how the information is gathered this may be done anywhere along the process flow or as a background event concurrent with the other processes. Purchase Order Creation If the commerce implementation integrates with an existing system, it may need to generate unique purchase orders. Services to integrate and manage this functionality may be required. Determine Payment Mechanism Interaction with the user may be required for determining the payment mechanism. Research is currently underway to determine if this may also be automated.

Detailed Description Text (1480):

Payment Methods There are a multitude of different vendors and technologies available for handling electronic payments. The infrastructure, process, and technology may vary dramatically from vendor to vendor. The actual mediums for the current payment options fall into these categories: Credit-Based Payment. Today, the most widely-used electronic payment option is the credit card. With the new transaction protocols and security features, credit cards can be used on the Internet just as they are in the real world. Consumer confidence is higher with the already familiar standard. Current overhead for clearing, settlement and fraud makes credit card based solutions uneconomical for transactions of small dollar amounts. Debit-Based Payment. Payment utilizing this method will directly debit and credit accounts. These may take the form of debit cards, electronic checks or messages utilizing EDI or EFT. Electronic Cash. Electronic cash is the electronic equivalent of real paper cash. It is usually implemented using public-key cryptography, digital signatures and blind signatures. Electronic cash is "digital" money on the computer's hard disk. Theoretically, the money could be spent in very small increments, such as tenths of a cent (U.S.) or less. In an electronic cash system there is usually a bank, responsible for issuing currency, consumers that obtain cash from either banks or brokers and merchants who will accept the digital cash for goods and services. In short, the bank, merchant and consumer each own a public and private key which is used to encrypt and digitally sign the electronic cash. Smartcards. A smartcard is a programmable storage device the same in size and appearance as a normal credit card. It contains a microchip to store and process information. Some of these cards can contain stored value in the form of digital coins. A lost card means lost value, just like cash. The person holding the card can spend the value stored on it at any merchant accepting smartcards. This

technology is particularly useful for online shopping, and is far less vulnerable than systems storing value on a hard disk. Transaction costs for this form of payment are very low, enabling the user to conduct micro-transactions of one penny or less. Microsoft and several computer manufacturers are pushing for standards to incorporate smartcard readers into PC keyboards, and most TV set-top Internet access devices already have them Digital Wallets. Digital wallet software facilitates secure, online transactions between the consumer and the merchant, and between the merchant and the bank. For the consumer, there will soon be literally hundreds of software "digital wallets" available. They will likely be free and similar in function, running within a web browser. Payment Authorization. In many cases, consumer sites which implement a credit card payment method will require payment authorization. In some cases the actual settlement process can not occur until the items are shipped. JEDI, being developed by W3C and CommerceNet in cooperation with many large technology companies, is a standard mechanism for Web clients and servers to find out what payment capabilities they have in common, and negotiate the payment instrument, protocol, and transport between one another. This will be transparent to the user; they will simply be told by the wallet software what payment options are available at this merchant (along with any available discounts for payment type or membership affiliations), and asked to choose.

Detailed Description Text (1675):

The most efficient way to trade bandwidth is to have one market for all participants. However, in order to encourage "Charter Customers," bandwidth providers may need to offer special rate structures and benefits to potential distributors. Once the bandwidth market is established, many of the benefits, such as bandwidth contracts and CPE traffic shaping, will be useful even for distributors who have large discount structures. Rather than create custom purchasing mechanisms for these customers, they could use the same processes and applications that the market uses for buying and selling bandwidth, even if they are dealing exclusively with only one bandwidth provider. Because of the standardized process for selling bandwidth, a bandwidth provider can avoid having to develop custom interfaces for each of its large distributors.

Detailed Description Text (1714):

Then, in operation 13402, an amount of money the buyer owes the seller for the reallocated bandwidth is determined based on the terms regarding the reallocation of bandwidth. Most often, this may be calculated as the price per unit of bandwidth times the number of units of bandwidth being sold and taking into account any penalties and discounts. If amounts of bandwidth of more than one seller are sold together such as under a contract as discussed above, the amount of money the buyer owes each seller is calculated. More detail is provided below in the discussion referencing FIGS. 135 through 139.

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L16: Entry 1 of 1

File: USPT

Aug 12, 2003

US-PAT-NO: 6606744

DOCUMENT-IDENTIFIER: US 6606744 B1

**** See image for Certificate of Correction ****

TITLE: Providing collaborative installation management in a network-based supply chain environment

DATE-ISSUED: August 12, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Mikurak, Michael G.	Hamilton	NJ		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Accenture, LLP	Palo Alto	CA			02

APPL-NO: 09/ 444654 [PALM]

DATE FILED: November 22, 1999

INT-CL: [07] G06 F 9/445

US-CL-ISSUED: 717/174; 717/174, 717/178, 705/26

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PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

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<input type="checkbox"/> <u>4972453</u>	November 1990	Daniel et al.	
<input type="checkbox"/> <u>5109337</u>	April 1992	Ferriter et al.	
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<input type="checkbox"/> <u>5297031</u>	March 1994	Gutterman et al.	
<input type="checkbox"/> <u>5483637</u>	January 1996	Winokur et al.	

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<input type="checkbox"/>	<u>5513343</u>	April 1996	Sakano et al.	
<input type="checkbox"/>	<u>5539877</u>	July 1996	Winokur et al.	
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<input type="checkbox"/>	<u>5621663</u>	April 1997	Skagerling	
<input type="checkbox"/>	<u>5646864</u>	July 1997	Whitney	
<input type="checkbox"/>	<u>5655068</u>	August 1997	Opoczynksi	
<input type="checkbox"/>	<u>5694546</u>	December 1997	Reisman	
<input type="checkbox"/>	<u>5696975</u>	December 1997	Moore et al.	717/168
<input type="checkbox"/>	<u>5729735</u>	March 1998	Meyering	
<input type="checkbox"/>	<u>5761502</u>	June 1998	Jacobs	
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<input type="checkbox"/>	<u>5819028</u>	October 1998	Manghirmalani et al.	
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<input type="checkbox"/>	<u>5999525</u>	December 1999	Krishnaswamy et al.	
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<input type="checkbox"/> <u>6253339</u>	June 2001	Tse et al.	
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<input type="checkbox"/> <u>6347398</u>	February 2002	Parthasarathy et al.	717/178
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ART-UNIT: 2122

PRIMARY-EXAMINER: Khatri; Anil

ATTY-AGENT-FIRM: Oppenheimer Wolff & Donnelly, LLP Nader; Rambod

ABSTRACT:

A system, method and article of manufacture are provided for collaborative installation management in a network-based supply chain environment. According to an embodiment of the invention, telephone calls, data and other multimedia information are routed through a network system which includes transfer of information across the internet utilizing telephony routing information and internet protocol address information. The system includes integrated Internet Protocol (IP) telephony services allowing a user of a web application to communicate in an audio fashion in-band without having to pick up another telephone. Users can click a button and go to a call center through the network using IP telephony. The system invokes an IP telephony session simultaneously with the data session, and uses an active directory lookup whenever a user uses the

system. Users include service providers and manufacturers utilizing the network-based supply chain environment.

18 Claims, 130 Drawing figures

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L6: Entry 1 of 1

File: USPT

Dec 31, 2002

DOCUMENT-IDENTIFIER: US 6502076 B1

TITLE: System and methods for determining and displaying product promotions

Detailed Description Text (48):

In FIG. 4, each box has a table name listed above it. Within each box, fields listed above the dividing line define the table's primary key. Other fields, listed below the dividing line, are attributes that can be looked up from the table using a valid primary key value. Fields followed by (FK) define values that can be used as keys into additional tables. Lines between tables convey the relationships between tables.

Detailed Description Text (49):

The database tables used by the Product Promotion/Attract Loop module are described briefly in the following subsections. In each table, the initial heading line gives the name of the table. Field names matching those in FIG. 4 appear down the left side of the table, with a description of the field to the right. A double line appears in the table as the dividing line between the fields comprising the table's primary key (above the double line) and attribute fields (below the double line).

Detailed Description Text (51):

The Sysparm configuration table 66a, illustrated in Table 1 below, stores all of the operating and configuration parameters for the Product Promotion/Attract Loop module. All of the device-group-default-XXX fields listed in the table provide the default values necessary for the promotion COM object to dynamically add a new group of system devices. When a query is made for a device that is not listed in the database, the promotion object automatically creates a new entry in the database for that device and it assigns the new device to the device group specified by the device-group-default-id field. If this device group does not already exist in the database, the promotion object automatically creates the device group using all of the device-group-default-XXX field values for the new group's attributes.

Detailed Description Text (81):

2. Find All Ad Groups for the Device Group and Category (Step 80): Second, the promotion object finds all ad groups for the device group and category by using the device's group identifier and the navigational category identifier, passed in from the caller, to query the Nav-Device-Ad-Group table 70a to find all of the ad groups ad-group-id with matching device group identifiers and navigational category identifiers nav-cat-id. If the navigational category identifier passed in is non-zero (ad groups are being requested for display with the user interface), the promotion object queries the Nav-Device-Ad-Group table 70a for all of the ad groups ad-group-id with matching device group identifiers and a navigational category identifier nav-cat-id of zero (uncategorized ad groups).

Detailed Description Text (83):

4. Retrieve Eligible Ad Group Properties and All Eligible Ads (Step 84): For each of the eligible ad groups found in Step 3, the promotion object uses the ad group's identifier ad-group-id as the key to query the Ad-Group table 70b for the ad

group's default duration ad-group-default-duration, start type ad-group-start-type, and order type ad-group-order-type. In addition, use the same ad group identifier ad-group-id as the key to query the Ad-Group-Member 70c table for all of the ads in the group ad-id, their explicit sort indices ad-group-member-index, their navigational category identifiers nav-cat-id, and their random order weights ad-group-member-weight.

Detailed Description Text (85):

6. Build Result Set of Ads (Step 88): Using all of the information obtained in Steps 4 and 5, construct a result set of ads that contains each ad's: (a) ad group identifier ad-group-id; (b) sort index ad-group-member-index; (c) navigational category identifier nav-cat-id; (d) ad identifier ad-id; (e) random order weight ad-group-member-weight; (f) display duration ad-language-duration; (g) content URL ad-language-url; and (h) link URL ad-language-link-url.

Detailed Description Text (87):

8. Sort Ads in Result Set (Step 92): Sort the final ad result set from Step 7. The result set is sorted differently depending on whether it is being used as part of the user interface (navigational category identifier passed in by caller is non-zero) or as an attract loop (navigational category identifier passed in by caller is zero): a. If the result set is being used as part of the user interface, the promotion object sorts the result set first in ascending order by navigational category identifier nav-cat-id and second in ascending order by ad identifier ad-id. b. If the result set is being used as an attract loop, it is sorted differently depending on the ad group's sort order type ad-group-order-type. (1) If the sort order type is random, AD_GROUP_ORDER_RANDOM, the result set is not sorted, as this is left to the Attract Loop Manager SSI. (2) If the sort order type is explicit, AD_GROUP_ORDER_EXPLICIT, the result set is sorted first in ascending order by ad group identifier ad-group-id and second in ascending order by each ad's sort index ad-group-member-index.

Detailed Description Text (96):

The eligible ads returned by the promotion object 26 are used to initialize internal Ad objects and a single internal Attract Loop object. These objects are client-side JavaScript objects maintained by the Attract Loop Manager 44. They are used to easily access the attributes of each ad as well as the attributes of the attract loop as a whole.

Detailed Description Text (104):

The Attract Loop Manager 44 invokes the promotion object 26 to retrieve all of the attributes of the instructional content for a given in-store terminal. These attributes include: (1) instruction duration, i.e., how long to display the instructional content; (2) instruction period, i.e., how often to display the instructional content; (3) instruction period type, i.e., how to interpret the instruction period; and (4) instruction URL, i.e., a reference to the instructional content itself.

Detailed Description Paragraph Table (4):

TABLE 4 Nav-Device-Ad-Group Database Table Definition NAV-DEVICE-AD-GROUP Field:
Description: device-group-id Integer value representing the device group identifier. nav-cat-id Integer value representing the navigational category identifier of the screen displayed (a value of zero indicates that the ad group has not been categorized -- only uncategorized ad groups will be shown in the attract loop). ad-group-id Long integer value uniquely identifying the ad group. nav-device-ad- Integer value provided to allow the same ad group to group-id be scheduled more than once for the same device group/category ID pair. nav-device-ad- Date value representing the start date of when the ad group-start-date group is eligible for display. nav-device-ad- Date value representing the stop date of when the ad group-stop-date group is eligible for display. nav-device-ad- Time value representing the start time of when the ad group-start-time group is eligible for

display. nav-device-ad- Time value representing the stop time of when the ad group-stop-time group is eligible for display. nav-device-ad- Byte value bit mask representing which days of the group-dow week the ad group is eligible for display. nav-device-ad- Byte value indicating which type of scheduling is used group-schedule- for the ad group. This field is used to indicate which type ad group date/time fields should be used to determine the ad group's time schedule. This field is also used to indicate how to interpret the values of the appropriate ad group date/time fields. Possible values and a more detailed description of ad group scheduling are provided in Table 9, below.

Detailed Description Paragraph Table (6):

TABLE 6 Ad-Group-Member Database Table Definition AD-GROUP-MEMBER Field:

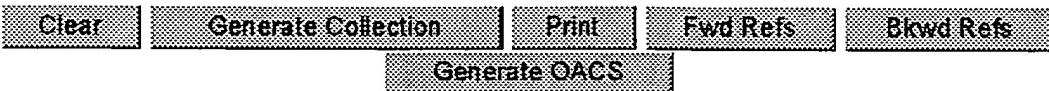
Description: ad-group-id Long integer value uniquely identifying the ad group. ad-group- Integer value specifying the sort index of the ad member-index within the ad group. Although this field must be specified, its value is ignored if the ad-group-order- type field of the Ad-Group table (Table 5) is set to AD_GROUP_ORDER_RANDOM. nav-cat-id Integer value representing the navigational category identifier of the screen displayed (a value of zero indicates that the ad group has not been categorized -- only uncategorized ad groups will be shown in the attract loop). ad-id Long integer value specifying the unique identifier for the ad. ad-group- Byte value from 1 to 100 specifying the sort order member-weight weight of the ad within the ad group. The lowest weight is 1 while the highest weight is 100. This field is only required when the value of the ad-group- order-type field of the Ad-Group table (Table 5) is set to AD_GROUP_ORDER_RANDOM

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1. Document ID: US 6606744 B1

L14: Entry 1 of 15

File: USPT

Aug 12, 2003

US-PAT-NO: 6606744

DOCUMENT-IDENTIFIER: US 6606744 B1

** See image for Certificate of Correction **

TITLE: Providing collaborative installation management in a network-based supply chain environment



2. Document ID: US 6427132 B1

L14: Entry 2 of 15

File: USPT

Jul 30, 2002

US-PAT-NO: 6427132

DOCUMENT-IDENTIFIER: US 6427132 B1

TITLE: System, method and article of manufacture for demonstrating E-commerce capabilities via a simulation on a network



3. Document ID: US 6363363 B1

L14: Entry 3 of 15

File: USPT

Mar 26, 2002

US-PAT-NO: 6363363

DOCUMENT-IDENTIFIER: US 6363363 B1

TITLE: System, method and article of manufacture for managing transactions in a high availability system



4. Document ID: US 6345239 B1

L14: Entry 4 of 15

File: USPT

Feb 5, 2002

US-PAT-NO: 6345239

DOCUMENT-IDENTIFIER: US 6345239 B1

TITLE: Remote demonstration of business capabilities in an e-commerce environment

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5. Document ID: US 6253027 B1

L14: Entry 5 of 15

File: USPT

Jun 26, 2001

US-PAT-NO: 6253027

DOCUMENT-IDENTIFIER: US 6253027 B1

TITLE: System, method and article of manufacture for exchanging software and configuration data over a multichannel, extensible, flexible architecture

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Abstract](#) | [Claims](#) | [KOMC](#) | [Drawn D](#)

6. Document ID: US 6178409 B1

L14: Entry 6 of 15

File: USPT

Jan 23, 2001

US-PAT-NO: 6178409

DOCUMENT-IDENTIFIER: US 6178409 B1

TITLE: System, method and article of manufacture for multiple-entry point virtual point of sale architecture

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Abstract](#) | [Claims](#) | [KOMC](#) | [Drawn D](#)

7. Document ID: US 6128624 A

L14: Entry 7 of 15

File: USPT

Oct 3, 2000

US-PAT-NO: 6128624

DOCUMENT-IDENTIFIER: US 6128624 A

**** See image for Certificate of Correction ****

TITLE: Collection and integration of internet and electronic commerce data in a database during web browsing

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Abstract](#) | [Claims](#) | [KOMC](#) | [Drawn D](#)

8. Document ID: US 6119105 A

L14: Entry 8 of 15

File: USPT

Sep 12, 2000

US-PAT-NO: 6119105

DOCUMENT-IDENTIFIER: US 6119105 A

TITLE: System, method and article of manufacture for initiation of software distribution from a point of certificate creation utilizing an extensible, flexible architecture

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Fwd Refs](#) | [Bkwd Refs](#) | [Claims](#) | [KMMC](#) | [Drawn D](#)

9. Document ID: US 6072870 A

L14: Entry 9 of 15

File: USPT

Jun 6, 2000

US-PAT-NO: 6072870

DOCUMENT-IDENTIFIER: US 6072870 A

TITLE: System, method and article of manufacture for a gateway payment architecture utilizing a multichannel, extensible, flexible architecture

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Fwd Refs](#) | [Bkwd Refs](#) | [Claims](#) | [KMMC](#) | [Drawn D](#)

10. Document ID: US 6026379 A

L14: Entry 10 of 15

File: USPT

Feb 15, 2000

US-PAT-NO: 6026379

DOCUMENT-IDENTIFIER: US 6026379 A

TITLE: System, method and article of manufacture for managing transactions in a high availability system

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Fwd Refs](#) | [Bkwd Refs](#) | [Claims](#) | [KMMC](#) | [Drawn D](#)

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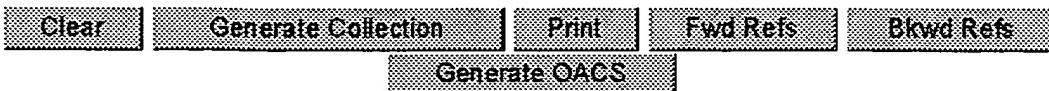
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11. Document ID: US 6002767 A

L14: Entry 11 of 15

File: USPT

Dec 14, 1999

US-PAT-NO: 6002767

DOCUMENT-IDENTIFIER: US 6002767 A

**** See image for Certificate of Correction ****

TITLE: System, method and article of manufacture for a modular gateway server architecture



12. Document ID: US 5987132 A

L14: Entry 12 of 15

File: USPT

Nov 16, 1999

US-PAT-NO: 5987132

DOCUMENT-IDENTIFIER: US 5987132 A

**** See image for Certificate of Correction ****

TITLE: System, method and article of manufacture for conditionally accepting a payment method utilizing an extensible, flexible architecture



13. Document ID: US 5943424 A

L14: Entry 13 of 15

File: USPT

Aug 24, 1999

US-PAT-NO: 5943424

DOCUMENT-IDENTIFIER: US 5943424 A

TITLE: System, method and article of manufacture for processing a plurality of transactions from a single initiation point on a multichannel, extensible, flexible architecture



14. Document ID: US 5889863 A

L14: Entry 14 of 15

File: USPT

Mar 30, 1999

US-PAT-NO: 5889863

DOCUMENT-IDENTIFIER: US 5889863 A

TITLE: System, method and article of manufacture for remote virtual point of sale processing utilizing a multichannel, extensible, flexible architecture

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KIN/C](#) | [Drawn De](#)

15. Document ID: US 5850446 A

L14: Entry 15 of 15

File: USPT

Dec 15, 1998

US-PAT-NO: 5850446

DOCUMENT-IDENTIFIER: US 5850446 A

TITLE: System, method and article of manufacture for virtual point of sale processing utilizing an extensible, flexible architecture

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